

REMARKS

This is in response to the Official Action mailed April 1, 2003, in which pending claims 13-25 were rejected.

Claims 13-16, 19-22 and 25 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,341,005 to *Oscarsson*. The Examiner asserts that *Oscarsson* discloses a method for producing a "hollow fiber bundle" including "covering the ends of the fiber (col. 3:22-25), potting the ends of the bundle (see col. 1, lines 20-28), and then cutting the ends to have the tube core open at the ends.. (Fig. 1-3, col. 3, line 60-col. 4 line 3)." The Examiner further states that "[t]he two half shells can be clamped together before sealing," that "[t]he fiber bundle is potted in the housing (col. 3:27-31)," that "the half shells could be sealed with potting after taking them out of the rotary winding wheel, or could be sealed before taking out of the rotary winding wheel (col. 2:53-63, and col. 4:1-3)," and that "[t]he potting completes the closing of the housing as in claim 13 [of the present invention] (see Fig. 1, col. 1, lines 20-28, and col. 4, lines 5-10)." See Official Action, page 2, lines 11-21.

Applicants respectfully traverse this rejection. Actually, *Oscarsson* teaches a method of manufacturing hollow fiber fluid fractionating cells comprised of the following steps, in sequence (*Oscarsson*, column 1, lines 28-42): (1) winding the hollow fibers onto a half-cell section to fully fill the cell sections; (2) closing the other half of the cell section over the filled half to complete the side walls of the cell core and secure the two sections together; (3) cutting the fibers between the cell cores and removing the cores from the winding device; (4) potting the fibers at the ends of the cell by centrifugal castings, which also permits the potting compound

to join with cell walls; and (5) again cutting the ends of the fibers to re-expose the hollow cores and sealing the endcaps onto the cell to complete the unit.

*Oscarsson* also includes a brief description of U.S. Patent No. 4,038,190 to *Baudet, et al.* at column 1, lines 20-28. The description of *Baudet, et al.*'s method of manufacturing hollow fiber fluid fractioning cells given within *Oscarrson* states that the fibers are laid around a core and potted in a cell section while the sections are still on the winding device. Next, the fibers are cut to free the sections, and the cell (fibers and core) is completed by addition of a cell wall (housing) and end caps. *Oscarsson* then states that *Baudet, et al.*'s method involves significant difficulty in properly placing the potting compound, and that *Oscarsson's* inventive method, as described above, allows better potting compound placement by the addition of several procedural steps. See *Oscarsson*, column 1, lines 29-42. One reason *Baudet, et al.*'s method, as described in *Oscarsson* involves potting compound placement problems is that the housing is added after the potting step has been completed.

Thus, it is clear that the *Baudet, et al.* and *Oscarsson* methods, as disclosed in *Oscarsson*, include totally separate and distinct procedures for manufacturing hollow fiber fluid fractioning cells, and not simply variations of a single methodology in which one of the steps in one method would be substituted for one of the steps in the other method. In order to be anticipatory, "the identical invention must be shown [in the prior art reference] in as complete detail as is contained in the claim." See MPEP § 2131, quoting *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed.Cir. 1989). Also, "[t]he elements must be arranged as required by the claim ..." See MPEP § 2131, quoting *In re Bond*,

910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1989). It is therefore improper for the Examiner to pick one or more steps from *Baudet, et al.*'s method as described in *Oscarsson* and substitute those for one or more steps in *Oscarsson*'s inventive method. This is precisely what the Examiner is doing by proposing that *Baudet, et al.*'s putative method step of potting "while the sections are still on the winding device," *Oscarsson*, column 1, lines 20-28, is combined with *Oscarsson*'s inventive method. Applicants' attorney presented this argument to the Examiner in a telephone conversation on September 26, 2003, during which conversation Applicants' attorney requested that the rejection and the finality of the Official Action be withdrawn. The Examiner disagreed and stated that the Applicants should repeat the above argument in the present response. Applicants hereby respectfully request the Examiner withdraw the rejection based on 35 U.S.C. §102(b) and the finality of the Official Action.

Independent claim 13 of the present invention presents a method of producing hollow fiber membrane-containing filters that minimizes the number of process steps, thereby minimizing the risk of exposure of the fibers to potential contamination. This inventive method comprises the steps of: laying fibers in the first portion of a filter housing; forming the first and a second portion of the filter housing into the filter housing; simultaneously adhering together the first and the second housing portion by means of a potting compound when the hollow fiber ends are potted; cutting the end of the fibers to expose open ends; and completing the housing with end caps. By adhering the first and second housing portions together at the same time that the hollow fiber ends are potted, the present invention reduces the number of process steps as compared with either *Oscarsson*'s method or *Baudet, et al.*'s method as described in *Oscarsson*.

In the present invention, the potting compound seals the first and second portion of the filter housing simultaneously as the fibers are potted by the potting compound. Oscarsson teaches that the housing parts are "secured" to hold the fiber in place. See Oscarsson, column 2, lines 6-9. While Oscarsson is silent about how this sealing is performed, it teaches that "only a sufficient amount of potting compound is used to fill the ends of the core," Oscarsson, column 3, lines 27-29, *italics added*. Thus, Oscarsson does not disclose using the potting compound to seal the housing parts to each other, otherwise more potting compound would be needed and it would need to be applied to more than just the "ends of the core." Contrarily, in the present invention as clearly recited in claim 13, the sealing of the housing portions takes place when the fiber ends are potted.

Moreover, Oscarsson teaches that the two housing sections are secured together before the fibers are cut and potted. See Oscarsson, column 1, lines 30-39. Oscarsson's potting operation thus occurs only after the two housing sections are secured together. In the present invention, adhering together the first housing portion and the second housing portion by means of the potting compound when the fiber ends are potted eliminates the separate process step for securing together the two housing portions. Thus, a separate device for connecting together the two housing portions in a sealed fashion is not needed in the present invention, thereby reducing the time and equipment needed or required for producing the cells, as well as reducing the potential for contamination of the hollow fibers.

Independent claim 22 also clearly recites that the "potting compound ... connect[s] together said bundle of said hollow fibers ... said bundle of hollow fibers to said tubular

filter housing, and ... said first and second portions of said tubular filter housing". See claim 22, emphasis added. Thus, while being a product claim, claim 22 describes a hollow membrane-containing filter wherein potting compound has been used to both adhere the hollow fibers to each other as well as to seal the filter housing portions to one another. This filter construction is not in any way disclosed by *Oscarsson*.

Neither *Oscarsson's* method nor *Baudet, et al.'s* method as described in *Oscarsson* discloses simultaneous potting of fiber ends and sealing of a first and second housing portion as in the present invention. Rejection of independent claims 13 and 22 and their dependent claims 14-16, 19-21, and 25 are therefore improper, as the *Oscarsson* reference is clearly not anticipatory of the present invention. Withdrawal of the Examiner's rejection under 35 U.S.C. §102(b) is thus respectfully requested.

Claims 17-18 and 23-24 have been rejected under 35 U.S.C. § 103(a) as being unpatentable under U.S. Patent No. 4,341,005 to *Oscarsson* in view of EP (0 200 158 A2), an Apparatus for Effecting Mass and/or Heat Transfer (corresponding U.S. Patent No. 4,724,900) to *Baurmeister et al.*

The Examiner has, in argument, correctly pointed out that *Oscarsson* "fails to disclose the two halves of the tubular housing as being flexibly connected (as in claims 17, 23 [of the present invention]) with film hinges (as in claims 18 and 24 [of the present invention])." The Examiner then cites *Baurmeister et al.* figures 9-11 and 14-16 as an example of longitudinally split housing halves joined by "film hinges", and states that it would have been obvious to one of skill in the art at the time to combine the *Oscarsson* and *Baurmeister et al.* references. The Applicants respectfully disagree.

In order to show that a claim is *prima facie* obvious over a combination of references, the Examiner must show that the combination discloses, teaches or suggests every limitation of the claim. See MPEP § 2143.03.

Firstly, Applicants restate the above-noted differences of Oscarsson, and its utter failure to disclose the simultaneous potting of fiber ends and sealing of a first and second housing portion as in the present invention. Baurmeister, et al. does not in any way provide this feature.

Moreover, neither Oscarsson nor Baurmeister et al., alone or in combination, disclose, teach or suggest a filter or method of producing a filter having two longitudinally split halves of tubular housing flexibly joined.

Baurmeister et al. figures 9-11 and 14-15 do not disclose a tubular housing longitudinally split into two halves, but rather disclose only a flexible tubular housing with a single longitudinal split. Baurmeister et al. figure 16, while disclosing a tubular housing split into two halves, does not disclose a *flexible* tubular housing or a "film hinge".

Baurmeister et al. figure 14, while disclosing the use of multiple "film" hinge-like slits on a tubular housing with a single longitudinal split, does not disclose the use of a single "film" hinge, such as used in claims 18 and 24 of the present invention. Since a "film" hinge represents an area of structural weakness, using only a single "film" hinge as in the present invention provides for greater structural strength over using multiple "film" hinges.

Furthermore, Baurmeister et al. does not disclose an aperture for use in potting, such as the potting aperture 53 of the present invention.

Additionally, to set forth a *prima facie* case of obviousness over a combination of references, the Examiner must

show that the prior art provides some suggestion or motivation to combine the references, *i.e.*, prior art must teach or suggest the desirability of the combination. See MPEP § 2143.01.

There is no motivation for one skilled in the art to use a heat or mass transfer apparatus, as in the *Baurmeister et al.* patent, in combination with the *Oscarsson* method of manufacturing hollow fiber fluid fractioning cells. The Examiner states that it would have been obvious to have two halves of a housing hinged together "like a box and its lid, or as taught by EP (158) [*Baurmeister et al.*]" into the *Oscarsson* method. However, *Baurmeister et al.*'s housing is not longitudinally divided into halves, except for one instance where a "film" hinge such as used in the present invention is not employed. No reference or suggestion is made in *Baurmeister et al.* to use the manufacturing method of *Oscarsson*. Accordingly, *Baurmeister et al.* is incapable of providing motivation for one skilled in the art to combine longitudinally divided tubular housing halves with or without film hinges into *Oscarsson*.

On the basis of the foregoing, Applicants respectfully maintain that the Examiner has not set forth a *prima facie* case of obviousness with respect to claims 17-18 and 23-24. Therefore, the rejection of these claims is improper and should be withdrawn.

As it is believed that all of the rejections set forth in the Official Action have been traversed, favorable reconsideration and allowance are earnestly solicited.

If, however, for any reason the Examiner does not believe that such action can be taken at this time, it is respectfully requested that he/she telephone Applicants' attorney at (908) 654-5000 in order to overcome any additional objections which he might have.

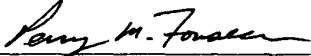
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If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

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